Volunteer Lake Assessment Program Individual Lake Reports

LEAVITT BAY, OSSIPEE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	227,357	**Max. Depth (m):**	12.8	**Flushing Rate (yr^{1})**	221
Surface Area (Ac.):	176	**Mean Depth (m):**	3.4	**P Retention Coef:**	-0.01
Shore Length (m):	4,800	**Volume (m^{3}):**	2,429,000	**Elevation (ft):**	406

TROPHIC CLASSIFICATION

Year	Trophic class
1987	MESOTROPHIC
2003	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

Variable Milfoil

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

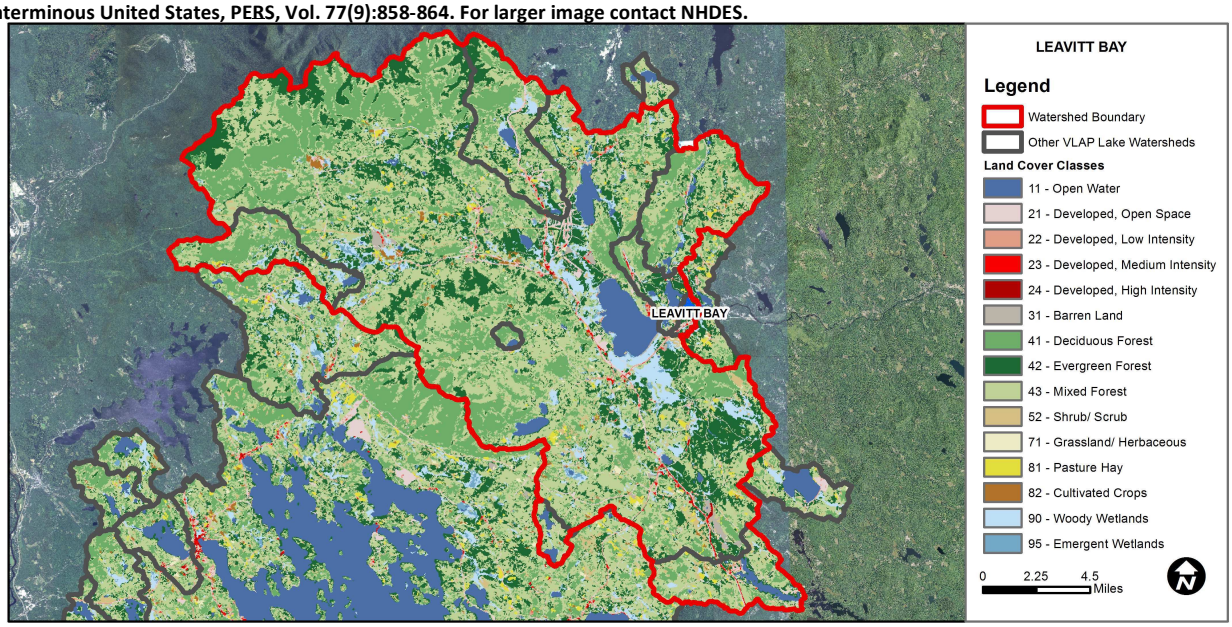
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

BROAD BAY - CAMP ROBIN HOOD BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
BROAD BAY - CAMP HUCKINS BEACH	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
LEAVITT BAY - CAMP MARIST BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



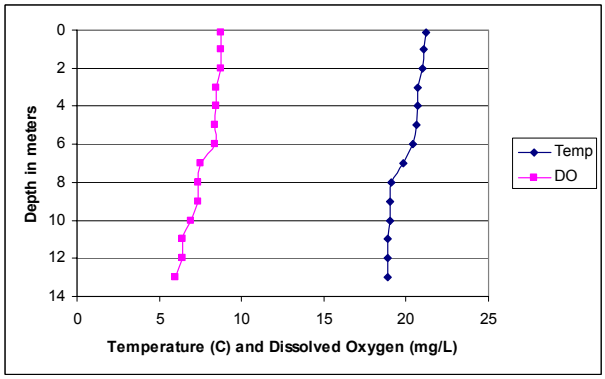
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	3.64	Barren Land	0.64	Grassland/Herbaceous	0.36
Developed-Open Space	2.95	Deciduous Forest	23.25	Pasture Hay	0.85
Developed-Low Intensity	0.77	Evergreen Forest	20.38	Cultivated Crops	0.5
Developed-Medium Intensity	0.25	Mixed Forest	38.4	Woody Wetlands	4.65
Developed-High Intensity	0.04	Shrub-Scrub	2.67	Emergent Wetlands	0.6

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
LEAVITT BAY, OSSIPEE, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were the highest measured since monitoring began. Historical trend analysis indicates a relatively stable chlorophyll level since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were low and below the NH lake median in 2012.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low. Historical trend analysis indicates a relatively stable epilimnetic (upper water layer) phosphorus level since monitoring began.
- **TRANSPARENCY:** Transparency was lower in 2012 possibly due to the increased algal growth. Historical trend analysis indicates a significantly decreasing (worsening) transparency since monitoring began.
- **TURBIDITY:** Turbidity levels were low in 2012.
- **pH:** pH levels were slightly low and historically have been at critical levels.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to at least three times per summer. Review transparency procedures and evaluate camp volunteers on process to ensure that the observed trend is not due to human error.

Dissolved Oxygen & Temperature Profile



Leavitt Bay Phytoplankton Population

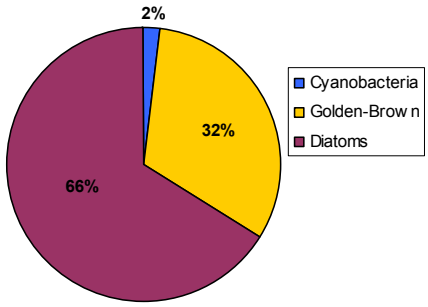


Table 1. 2012 Average Water Quality Data for LEAVITT BAY

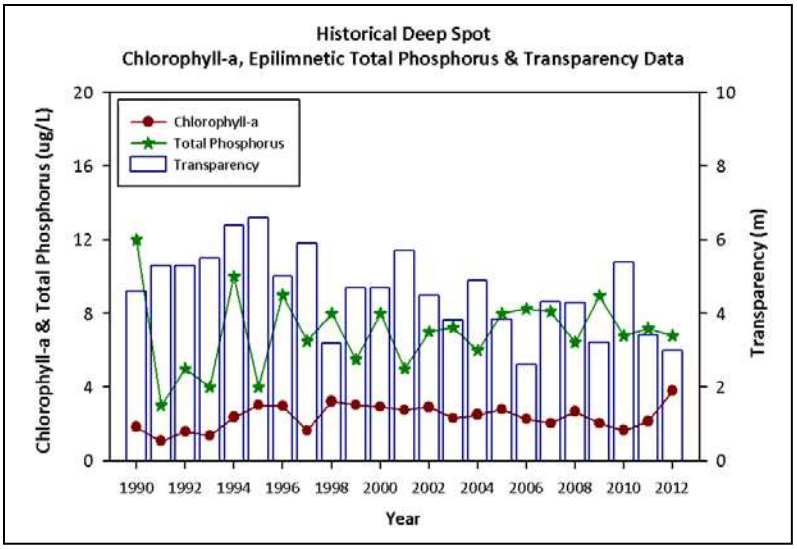
Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	3.40	3.81	4	35.2	7	3.00	4.00	0.65	6.71
Deep Metalimnion				35.8	8			0.62	6.52
Deep Hypolimnion				35.8	3			0.63	6.56

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Stable	Data not significantly increasing or decreasing.
Transparency	Degrading	Data significantly decreasing (worsening).
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.



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